

88832

S/152/61/000/001/004/007
B023/B064

10.2000

AUTHOR: Grudzhaliyev, E. A.

TITLE: Coefficient of the hydrodynamic resistance in high-pressure flows

PERIODICAL: Izvestiya vysshikh uchebnykh zuvedeniy. Neft' i gaz, no. 1, 1961, 83-90

TEXT: The purpose of the present study was to find general interrelations between parameters in order to be able to study the coefficient of the hydrodynamic resistance in the investigation of supersonic flows of the real gas. Using published data of A. A. Gukhman, A. F. Gandel'sman, N. V. Ilvukhin and L. N. Naurits, the author applies the method of dimensionless parameters (Ref. 1). The first section of the paper deals with dimensionless parameters for the pressure in the real gas flow. The author gives a definition obtained from a paper by Gandel'sman of the dimensionless parameter π for the pressure

$$\frac{p}{\rho w a_{cr}} \quad (2) ,$$

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where p is the gas pressure, ρ the density in the given cross section, w the velocity of the real gas and a_{cr} the critical velocity of the real gas.

For the velocity of sound in the real gas the author derived the expression:

$a^2 = \gamma^2 k g R T$, (3), where a denotes the velocity of sound in the real gas;

$$\gamma^2 = \frac{z^2}{k \left\{ z - p \left(\frac{\partial z}{\partial p} \right)_T - \frac{A R}{c_p} \left[z + T \left(\frac{\partial z}{\partial T} \right)_p \right]^2 \right\}} \quad (4);$$

z is the compressibility coefficient; c_p the specific heat for the real gas at constant pressure. After a series of calculations, the following final expression is obtained:

$$\pi = \frac{k+1}{2k} \cdot \frac{z}{(1+b) \left\{ \frac{z}{a_{cr}} \right\}^2} \cdot \frac{1}{\lambda} (1 - c\lambda^2) \quad (30),$$

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where b , c and $\frac{2}{cr}$ were expressed by the equations

$$\zeta_{kp}^2 = \frac{\frac{\kappa+1}{2} y_{kp}^2}{1 + \frac{1}{\mu_T(0-kp)} \cdot \frac{x_{kp}-1}{x_{kp}} \left[\frac{\kappa}{2} y_{kp}^2 + (z_{kp} - z_0)_T \right]}, \quad (18)$$

$$b = \frac{1}{\mu_T} \cdot \frac{x-1}{x} \left(z - z_0 \right)_T, \quad (20) \quad c = \frac{k}{k+1} \cdot \frac{2}{cr} \cdot \frac{1}{\mu_T} \cdot \frac{x-1}{x} \quad (21)$$

If $b = 0$ and $c = \frac{k-1}{k+1}$, Eq. (30) reads:

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$$\pi_{id} = \frac{k+1}{2k} \cdot \frac{1}{\lambda_{id}} \left(1 - \frac{k-1}{k+1} \lambda_{id}^2 \right)$$

for the ideal gas. λ is the reduced velocity of u/a_{cr} . The critical value of the reduced pressure at $\lambda = 1$ is

$$\pi_{cr} = \frac{k+1}{2k} \cdot \frac{z_{cr}}{(1 + b_{cr})^2} (1 - c_{cr}) \quad (32).$$

For the ideal gas, (32) takes the form: $\pi_{cr.id.} = \frac{1}{k}$ (33). According to Eq. (2), the absolute pressure in the critical cross section $p_{cr} = \pi_{cr}(\rho w)_{cr} a_{cr}$ (34). For the ideal gas equation

$$p_{cr.id} = \frac{1}{k} \cdot \frac{G_{id}}{g F_{cr}} a_{cr.id} \quad (36)$$

is obtained. G = weight rate of gas, F = channel cross section. In the

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author's opinion, the reduced pressure is a convenient initial parameter in the evaluation of experimental data. The second part of the paper deals with the coefficient of hydrodynamic resistance. When studying one-dimensional real gas flows (Ref. 7) for a tube with variable cross section F , the author derived the following equation for the motion of a real gas:

$$(M^2 - 1) \frac{dw}{w} = \frac{dF}{F} - \frac{M^2}{2} \frac{dl}{D} (1 + \omega) \quad (37),$$

where D is the diameter of the tube, dl the length of an infinitely small tube section, ω - coefficient of the hydrodynamic resistance, the quantity $M = \frac{w}{a}$ (38), ω is defined by the following equation:

$$\omega = \frac{z}{\mu_p} \cdot \frac{1}{\frac{x}{x-1} \cdot \frac{\mu_r}{\mu_p} - 1} \quad (39)$$

Eq. (41) is obtained from Eq. (4).

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$y^2 = z^2/R \left[\mu_z - (x-1)\mu_p/x \right]$; μ_z and μ_p are defined by equations:

$$\mu_z = -\frac{p}{RT} \left(\frac{\partial v}{\partial p} \right)_T; \quad (9) \quad \mu_p = \frac{p}{R} \left(\frac{\partial v}{\partial T} \right)_p. \quad (10)$$

For the relation between y^2 and x equation:

$$\omega = y^2 \frac{\kappa}{z} \cdot \frac{x-1}{x}. \quad (42)$$

is obtained from (39) and (41). From Eqs. (12) and (38) the author concludes that $Ma = \lambda a_{cr}$ (43). Under consideration of Eqs. (3) and (17) Eq. (43)

obtains the form

$$M^2 = \frac{2}{\kappa+1} \left(\frac{t_{xp}}{y} \right)^2 \frac{T_0}{T}. \quad (44)$$

Under critical conditions, ($M = 1$, $\lambda = 1$, $T = T_{cr}$, $y = y_{cr}$) (44) becomes an equation for the critical ratio of temperatures

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$$\frac{T_{cr}}{T_0} = \frac{2}{k+1} \left(\frac{f_{cr}}{y_{cr}} \right)^2 \quad (45).$$

On the basis of the equation for the adiabatic line of a real gas, the author obtains the expression of the critical ratio of the real gas pressures, passes over to the ideal gas and represents (37) in the form of (49)

$$\left(\frac{1}{M^2} - 1 \right) \frac{dw}{w} = \frac{dl}{2D} (1 + w) - \frac{1}{M^2} \frac{dF}{F} \quad (49)$$

By a joint solution of (6), (44) and (49), and under consideration of (20), (21) and (40), the author after several transformations arrives at (50), where a definition is given of (51), (52), (53), and (54) which are contained therein

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$$\left(\varepsilon \frac{1}{\lambda^2} - 1\right) \frac{d\lambda}{\lambda} - \frac{d\lambda}{2\lambda} \beta - n \frac{dF}{F}, \quad (50)$$

где

$$\varepsilon = \frac{1}{c \left(1 + \frac{2n}{\kappa y^2}\right)}; \quad (51)$$

$$\beta = -\frac{1 + w}{1 + \frac{\kappa y^2}{2n}}; \quad (52)$$

$$n = \bar{\mu}_r \frac{x}{x-1} + (z-z_0)_r; \quad (53)$$

$$\vartheta = \frac{\frac{1}{c\lambda^2} - 1}{1 + \frac{2n}{\kappa y^2}}. \quad (54)$$

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He furthermore introduces D_{cr} for the diameter of the critical cross section, $D = \frac{D}{D_{cr}}$ for the dimensionless channel diameter in the studied cross

section, $dl = \frac{dl}{D_{cr}}$ for the dimensionless length of the studied elementary

section, multiplies both parts of the Eq. (50) with D_{cr} , and obtains

$$D_{cr} \left(\frac{1}{\sqrt{2}} - 1 \right) \frac{d\lambda}{\lambda} = \frac{dl}{2D} - D_{cr} \frac{dF}{F} \quad (55).$$

The author furthermore solves (55) with respect to λ and obtains

$$\lambda = \frac{2D}{\beta} \left[\left(\frac{1}{\sqrt{2}} - 1 \right) \frac{d\lambda}{dl} + \frac{1}{dl} \cdot \frac{dF}{F} \right] \quad (56)$$

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On the transition of real gas to ideal gas, (56) becomes the well-known formula of Prandtl-Prell, which is also solved with respect to ϵ .
Finally, the function

$$\epsilon_{id} = \frac{k+1}{k} \left(D \frac{1}{\epsilon_{id}} - \frac{1}{3} \right) \frac{d \epsilon_{id}}{dl} \quad (59)$$

which is well-known in gas dynamics, is obtained as applied to an ideal gas flow. In (59), the coefficient of the gas-dynamic resistance is a given function of the number Re and thus independent of M. The paper of A. N. Rozen is mentioned. There are 7 Soviet-bloc references.

ASSOCIATION: Azerbaydzhanskiy institut nefiti i khimii im. M. Azizbekova
(Azerbaydzhan Institute of Petroleum and Chemistry imeni
M. Azizbekov)

SUBMITTED: December 8, 1960

Card 10/10

21773

S/170/61/004/004/004/014
B108/B209

26.2111

AUTHOR: Orudzhaliyev, E. A.

TITLE: Some relations for supersonic gas flow at high pressures

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 4, 1961, 25 - 31

TEXT: The author uses a new method of describing a supersonic gas flow at high pressures by hydrodynamical calculation. This method (Ref. 2: Gukhman A. A., Gandel'sman A. F. i Naurits L. N. "Energomashinostroyeniye", No. 7, 1957) is based on using a relation between the work of friction in a small region and the corresponding entropy variation. The differential work of friction in a tube of diameter D is given by

$$dL_{\tau} = \frac{\omega^2}{2g} \frac{dl}{D}, \quad (1),$$

where ξ denotes the hydraulic drag coefficient and ω the flow velocity.

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This work corresponds to a change in entropy: $dL_{\tau p} = \frac{TdS}{A}$ (2) if the flow is adiabatic (A stands for the mechanical equivalent of heat). With the reduced entropy

$$\epsilon = \frac{S}{AR} \quad (3) \quad \text{one may write } d\epsilon = \frac{dS}{AR} = \frac{dL_{\tau p}}{RT} \quad (4).$$

On the basis of earlier papers (Refs. 3, 4, 5: Orudzhaliyev E. A. "Neft' i gaz", No. 2, 1960; No. 5, 1959, and No. 9, 1959, respectively; Ref. 6: Rozen A. M. ZhFKh, t. 19, vyp. 9, 1945), the author writes for the inter-relation between ϵ and $d\epsilon$:

$$\epsilon = \frac{k+1}{k} \frac{1}{\xi_{kp}^2 \lambda^2} D \frac{1 - \frac{k}{k+1} \xi_{kp}^2 \frac{1}{\mu_r} \frac{x-1}{x} \lambda^2}{1 + \frac{1}{\mu_r} \frac{x-1}{x} (z-z_0)r} \frac{d\sigma}{dl} \quad (8)$$

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where $\lambda = u/a_{kp}$ denotes the velocity coefficient, a_{kp} - the critical velocity, z and z_0 the compressibility coefficients at flow and drag pressure, k the adiabatic index of perfect gas. The author then expresses $d\sigma$ by dimensionless parameters:

$$d\sigma = \left(\frac{c_p}{AR} - \frac{\mu_p^2}{\mu_T} \right) \frac{d\tau}{\tau} + z \frac{\mu_p}{\mu_T} \left(\frac{df}{f} + \frac{d\lambda}{\lambda} \right), \quad (18),$$

where $\tau = T/T_{kp}$; T_{kp} denoting the temperature of a real gas in the critical cross section F_{kp} ; $f = F/F_{kp}$. In other form, this reads:

$$d\sigma = d \ln \left[(f\lambda)^z \frac{\mu_p}{\mu_T} \frac{c_p}{AR} - \frac{\mu_p^2}{\mu_T} \right] = d \ln \psi = \frac{d\psi}{\psi}, \quad (19).$$

The function ψ for a real gas is

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$$\psi = (f \lambda) \frac{z}{\mu_T} \left[\frac{k+1}{2} \left(\frac{y_{kp}}{\xi_{kp}} \right)^2 \frac{1 - \frac{k}{k+1} \frac{\xi_{kp}^2}{\mu_T} \frac{1}{x} \lambda^2}{1 + \frac{1}{\mu_T} \frac{x-1}{x} (z-z_0)_T} \right] \frac{c_p}{AR} - \frac{\mu_p^2}{\mu_T} \quad (24)$$

when

$$\tau = \frac{1 - \frac{k}{k+1} \frac{\xi_{kp}^2}{\mu_T} \frac{1}{x} \lambda^2}{1 + \frac{1}{\mu_T} \frac{x-1}{x} (z-z_0)_T} \frac{k+1}{2} \left(\frac{y_{kp}}{\xi_{kp}} \right)^2 \quad (22)$$

The latter expression was obtained by substitution from

$$\frac{T_0}{T} = \frac{1 + \frac{1}{\mu_T} \frac{x-1}{x} (z-z_0)_T}{1 - \frac{k}{k+1} \frac{\xi_{kp}^2}{\mu_T} \frac{1}{x} \lambda^2} \quad (7)$$

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and

$$\frac{T_{\kappa p}}{T_0} = \frac{2}{k+1} \left(\frac{\xi_{\kappa p}}{y_{\kappa p}} \right)^2. \quad (21)$$

(Ref. 6). Introducing the reduced pressure $\Pi = \frac{p}{\rho \omega a_{\kappa p}}$ (26), the author

obtains

$$\Pi = \frac{k+1}{2k} \frac{z}{(1+b)\xi_{\kappa p}^2} \frac{1}{\lambda} (1 - c\lambda^2). \quad (36),$$

where

$$\left. \begin{aligned} b &= \frac{1}{p_T} \frac{x-1}{x} (z - z_0)_T \\ c &= \frac{k}{k+1} \xi_{\kappa p}^2 \frac{1}{p_T} \frac{x-1}{x} \end{aligned} \right\} \quad (30),$$

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or, further,

$$\frac{\Pi}{\tau} = \frac{1}{k} \frac{z}{y_{kp}^2} \quad (38).$$

The hypothesis of linearity (Ref. 2) expressed by $d\bar{s}/d\bar{l} = \text{const}$ is applied here ($d\bar{l} = dl/D_{kp}$; D_{kp} - diameter of the critical cross section).

With

$$\eta = d\bar{s}/d\bar{l} = d \ln \psi / d\bar{l} \quad (40')$$

one obtains $\ln \psi = \eta \bar{l}$ (41). For isentropic gas flow this leads to

$$f_s = \frac{1}{\lambda \tau \left(\frac{c_p}{AR} - \frac{\mu_p^2}{\mu_T} \right) z \frac{\mu_T}{\mu_p}} \quad (42).$$

With

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$$\psi = (f/f_s)^{\frac{\mu_P}{\mu_T}} \quad (43)$$

the final result reads as follows:

$$f_s = e^{-\eta} f^{\frac{\mu_P}{\mu_T}} \quad (44)$$

The subscript s refers to isentropic flow. It is stated that, beside the cross section of a tube through which a gas flows, also the pressure and temperature distribution along the tube must be known when the flow of a real gas is to be described. [Abstracter's note: Most of the notations used in this paper are not explained and go back to Ref. 6.] There are 8 Soviet-bloc references.

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Some relations for supersonic ...

ASSOCIATION: Azerbaydzhanskiy institut nefi i khimii, g. Baku
(Azerbaydzhani Institute of Petroleum and Chemistry, Baku)

SUBMITTED: December 14, 1960

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ORUDZHALIYEV, E.A.

Theory of imperfect gas flow in pipelines. Izv. vys. uch. zav.;
neft' i gaz 4 no.6:111-116 '61. (MIRA 15:1)

1. Azerbaydzhanskiy institut nefti i khimii imeni M.Azizbekova.
(Gas flow)

ORUDZHALIYEV, E.A.

Equations of the flow of imperfect gas in gas mains with heat
exchange in the head section. Izv.vys.ucheb.zav.; neft' i gaz 4
no.7:81-90 '61. (MIRA 14:10)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova.
(Gas, Natural—Pipelines)

AUTHOR: Orudzhaliyev, M.A.

SOV-90-58-10-3/9

TITLE:

The Degree of Reduction of Active Losses by Compensation of the Reactive Load of a Pumping Engine (O stepeni snizheniya aktivnykh poter' pri kompensatsii reaktivnoy nagruzki dvigatelya stanka-kachalki)

PERIODICAL:

Energeticheskiy byulleten', 1958, Nr 10, pp 8 - 9 (USSR)

ABSTRACT:

The author opens by stating that due to their specific working conditions, the pumping engines of deep-pumping installations have an unfavorable effect on the power factor of the driving engine; compensating devices must be used. The most efficient form of compensating device consists of condensers connected to the terminals of the engine and having a common switch with it. However, as the engine works with a variable load curve, which causes changes in the reactive power taken by the engine out of the network, it has varying degrees of compensation. Therefore the reactive current of the engine, acquiring retarding as well as advancing values, causes additional losses of energy. The author de-

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SOV-90-58-10-3/9

The Degree of Reduction of Active Losses by Compensation of the Reactive Load of a Pumping Engine

monstrates by graphs and formulae how to determine the factual reduction of the loss of energy by means of the compensation of the reactive load of a pumping engine. There are 2 graphs.

1. Pumps--Performance
2. Electric motors--Electrical factors
3. Mathematics--Applications

Card 2/2

ORUDZHALIYEV, M.A.

Using synchronous motors in optimalizing voltage conditions. Za
tekh.prog. 3 no.8:15-17 Ag '63. (MIRA 17:1)

1. Azerbaydzhanskiy politekhnicheskiy institut.

ORUDZHALIYEV, N.G.

Effect of sowing and transplanting time on the vegetation
of the common cabbage under conditions prevailing in Apsheron.
Izv. AN Azerb. SSR. Ser. biol. i med. nauk no.11:31-38 '61.
(MLRA 15:3)

(APSHERON --CABBAGE)

ORUDZHALIYEV, N.G.

Summer and fall cultivation of common cabbage under conditions
of the Apsheron Peninsula. Dokl. AN Azerb. SSR 19 no.12:49-51
'63. (MIRA 17:4)

1. Institut genetiki i selektsii AN AzSSR. Predstavleno
akademikom AN AzSSR D.M.Guseynovym.

ORUDZHALIYEV, N.G.

Selection of head cabbage varieties for cultivation in the Abkhazian
Peninsula. Izv. AN Azerb. SSR. Ser. Biol. i med. nauk. 1963. 13:50
'63. (Am. 115)

ORUDZHALIYEV, Z.A., dotsent.

Adiabatic equation for real gases slightly deviating from the ideal.
Trudy Azerb. ind.inst. no.7:130-141 '54. (MIRA 9:9)
(Gas flow)

ORUDZHEV, A.A.

ORUDZHEV, A.A.

Road builders of Azerbaijan improve roads of the Republic. Avt. dor.
21 no.1:35 Ja '58. (MIRA 11:1)
(Azerbaijan--Roadside improvement) (Azerbaijan--Roads)

ORUDZHEV, A. K.

Azerbaijan-Afforestation

Experimental forest plantings in Azerbaijan. A. K. Orudzhev. Les i step 4 No. 7
1952.

9. Monthly List of Russian Accessions, Library of Congress, September 195~~4~~², Uncl.

ORUDZHEV, A.K., kandidat sel'skokhozyaystvennykh nauk.

Developing the Shirvan Steppe. Nauka i zhizn' 20 no.9:38 S '53.

(MIRA 6:11)

(Shirvan Steppe--Reclamation of land) (Reclamation of land--Shirvan Steppe)

Orudzhev, A.
Category : USSR / Weeds and Weed Control

M

Abs Jour : Ref Zhur - Biol., No 6, March 1967, No 22913

Author : Orudzhev, A., Korobatov, V.

Title : Controlling Weed Growth in Unterraced Plowing for Cotton Plants

Orig Pub : Khlopkovodstvo, 1956, No 5, 36-40

Abstract : In order to clarify the significance of the new system of soil treatment proposed by T.S. Maltsev for controlling weeds in cotton crop rotations, 2 tests were made at the central station of the Azerbaidzhan institute of cotton cultivation in 1954. Each test had 3 variants of fall soil treatment: 1) plowing with terracing of 25-28 cm. Each test was made on sectors of 500 m² in a triple repetition. In one experiment the plowing of alfalfa under cotton was conducted, and in the other plowing after cotton under cotton [*sic*] (the latter in crop rotation). In the first experiment a very abundant alfalfa growth was noted after an untterraced plowing and shallow plowing. In a double shallow plowing before sowing and the first interrow cultivation, alfalfa is fully liquidated on all three variants. However the total clogging of the sowing remains much lower all summer on the terraced plowing.

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Category : USSR / Weeds and Weed Control

M

Abs Jour : Ref Zhur - Biol., No 6, March 1957, No 22913

Only in December 1955 after several interrow cultivations was the clogging in all variants equalized. Only on places shallowly plowed are more perennials noted and fewer wintering weeds. In the second experiment, where the same variants were studied on cotton plants over cotton planting, the clogging in all variants was slight and differed but little. The cotton plant yield was not considered in this experiment.

Card : 2/2

0X44ZHEV, A.K.

ORUDZHEV, A.K., kand.sel'skokhozyaystvennykh nauk; GLUSHANOVSKAYA, V., red.;
MIRDZHAFAROV, A., tekhn.red.

[Cultivation practices for high cotton yields and prospects for
the development of cotton growing in Azerbaijan] Agrotekhnika
vysokogo urozhaya khlopka i perspektivy razvitiia khlopkovodstva
v Azerbaidzhane. Baku, Azerbaidzhanskoe gos.izd-vo, 1957. 282 p.
(MIRA 11:3)

(Azerbaijan--Cotton growing)

USSR / Cultivated Plants. Technical. Oleaceous, Sugar Bearing
Plants.

M-6

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58670

Author : Orudzhev, A.

Inst : Azerbaydzhani Scient.-Research Institute of Cotton
Cultivation

Title : Cultivation of Cotton Plants Without Shoveling

Orig Pub : Sots. s.-kh. Azerbaydzhana, 1957, No 5, 16-19

Abstract : Experiments, carried out by the Azerbaydzhani scient.-
res. institute of cotton cultivation at the Central and
Shirvan experimental stations and in the kolkhoz im.
Lenin of Safaraliev rayon in 1955, confirmed that the
manual work involved in square-nidus sowing is 2-3
times smaller than in the case of sowing in rows. The
increment of the yield of raw cotton was as high as 5.5
cwt/ha. In square-nidus sowings, (in areas of 60 x 60

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USSR/Cultivated Plants - Commercial. Oil-Bearing. Sugar-Bearing.

M-5

Abs Jour : Ref Zhur - Biol., No 20, 1958, 91740

Author : Orudzhev, A., Zaytsev, V.

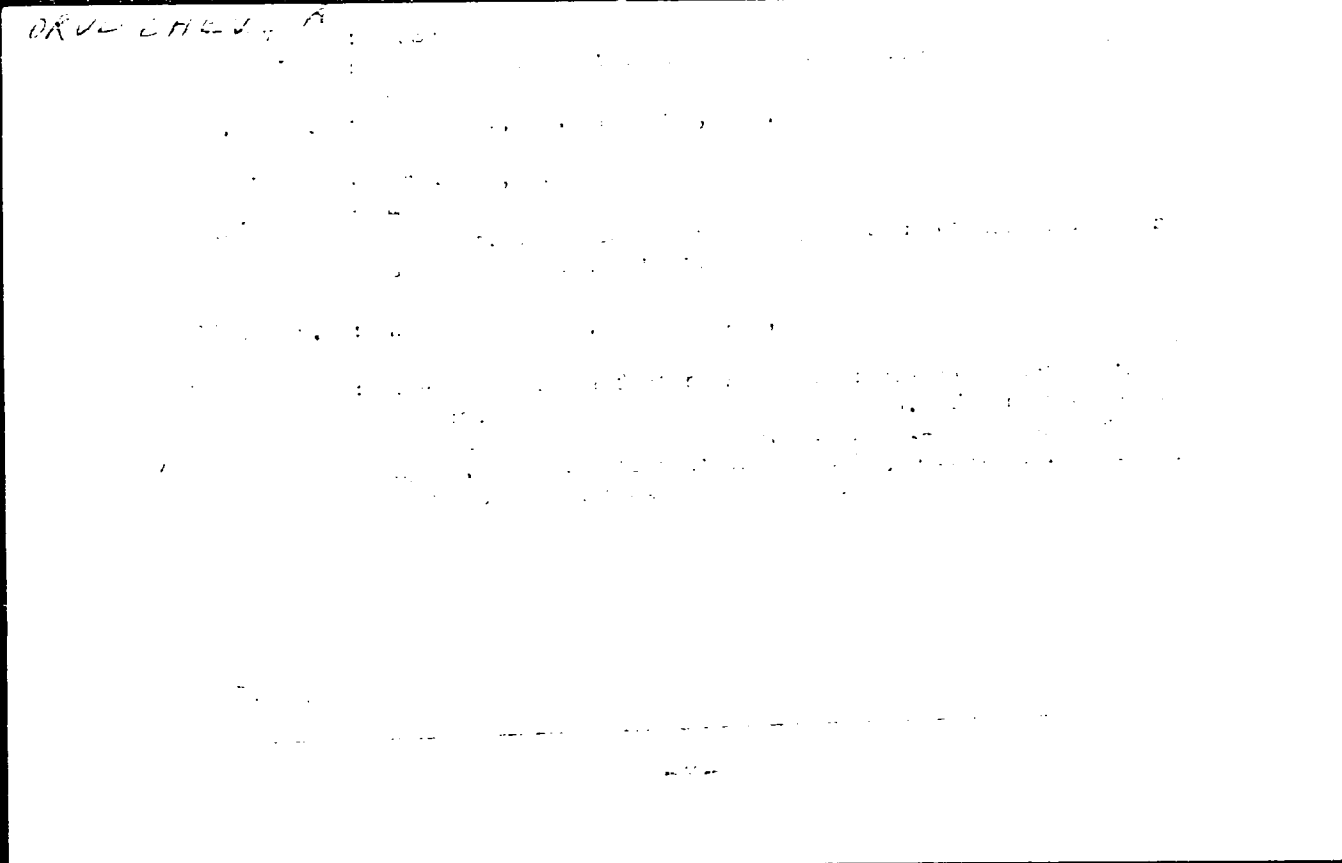
Inst : Azerbaydzhan Cotton Scientific Research Institute

Title : An Experiment in Using of Winter Reserve Irrigation on Cotton in Azerbaydzhan.

Orig Pub : Khlopkovodstvo, 1957, No 12, 28-32.

Abstract : After the discontinuation of vegetative irrigation the soil moisture of the cotton fields in Azervaydzhan quickly drops to 55-65% of the field moisture capacity. Therefore, winter and spring water reserves are used. Experiments conducted by the Azervaydzhan Cotton Scientific Research Institute established the advantage of using winter water reserves in preference to the spring reserves

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ALIEKHANOV, F.N.; AKOCHANOV, D.A.; AKHUNDOV, V.Yu.; ALILADE, M.A.; AZILBEROV,
Sh.A.; DAGIROV, M.A.; VEZIROV, S.A.; VOLOBUYEV, V.R.; EBELILOV, F.M.;
GADZHIYEV, M.M.; GUSEYEV, D.M.; GUSEYNOV, I.A.; DADASHBEY, F.F.;
DADASHZADE, M.A.; DALIN, M.A.; ISFENDEROV, M.A.; KAZIYEV, M.A.;
FARAYEV, A.I.; KASHKAY, M.S.; KEL'DYSH, M.V.; KERIMOV, A.G.;
IEMBERANSKIY, A.D.; MAMEDOV, G.F.; MEKHTIYEV, M.R.; MIRZOYEV, S.A.;
NAGIYEV, M.F.; NESRULIYEV, N.I.; ORUDZHEV, A.I.; GADZHAOV, R.A.;
RUDNEV, K.N.; SADYKOV, R.N.; SEMEROV, N.N.; TOICHIYEV, A.V.;
TOPCHIBASHEV, M.A.; TALROVA, T.A.; KHALILOV, Z.I.; EFENDIYEV, G.kh.;
SHUIYUROVA, Z.Z.

Iusif Geidarovich Mamedaliev; obituary dokl AN Azerb SSR 17
no.12:1123-1126 '61 (MIRA 15:2)
(Mamedaliev, Iusif Geidarovich, 1905-1961)

UNCLASSIFIED - CONFIDENTIAL - SECRET - SUBSECRET

Author : [REDACTED] 1976

Editor : [REDACTED]

Info :

Title : [REDACTED]

Original : [REDACTED] 9, 19-26.

Abstract : [REDACTED]

Class 1/1

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ORUDZHEV GARDASHKHAN A

44-1-567

TRANSLATION FROM: Referativnyy Zhurnal, Matematika, 1957, Nr 1,
p. 92 (USSR)

AUTHOR: Orudzhev, Gardashkhan

TITLE: On the Convergence of Newton's Interpolation
Series (O skhodimosti interpol'yatsionnogo ryada
N'yutona)

PERIODICAL: Tr. Azerb. gos.ped. in-ta, 1955, Nr 2, pp. 146-153

ABSTRACT: An investigation is made of Newton's interpolation series:

$$\sum_{n=1}^{\infty} a_n (z-x_1)(z-x_2) \dots (z-x_n) \quad (1)$$

with interpolation knots

$x_n = S_n/P_n(P_0)$, $\lim_{n \rightarrow \infty} S_n = \lim_{n \rightarrow \infty} (P_1 + P_2 + \dots + P_n) = \infty$ for $n \rightarrow \infty$
assuming that the exponent of convergence μ of a sequence
 $\{x_n\}$ fulfills the condition: $1 \leq \mu < 2$. It is proved that
when series (1) converges at a point z_0 , which does not
coincide with the interpolation knots, it will converge
on a half plane $1 + \operatorname{Re}(z - z_0) > \mu$. Further on, two prop-
ositions are proved: 1) if series (1) has a finite
abscissa of convergence λ , then it converges uniformly
in the region given by the inequalities

$$\operatorname{Re} z + 1 > \mu + \lambda + \varepsilon, \quad |z - \mu - \lambda + 1| \leq R$$

Card 1/2

On the Convergence of Newton's Interpolation Series (Cont.) ⁴⁴⁻¹⁻⁵⁶⁷

for any as-small-as-desired $\varepsilon > 0$ and as-large-as-desired R (in the author's inexact formulation "for sufficiently large R "), and its sum will be a regular function in any finite part of the half plane $\text{Re } z + 1 > \lambda + \mu$

2) Newton's series (1) and the generalized Dirichlet series $\sum_{n=1}^{\infty} c_n e^{-\lambda n}$, $c_n = (-1)^n a_n \prod_{k=1}^n s_k / p_k$, $\lambda = \ln S_n$,

have the same abscissas of convergence and of absolute convergence. Both theorems are a generalization of corresponding theorems for the Newton series with natural knots of interpolation (Gel'fond, A. O., Elimination of Finite Differences, 1952, pp. 162-169), which are obtained from the author's theorems at $p_1 = p_2 = \dots p_n = \dots = 1$.

A. G. Shkol'nik

Card 2/2

U.S.D.Z., V, G.A., 2nd. May - 1936. Ser--(1936) "1936" General. ~~1936~~ 1936
 terrol tion. "The Social Revolution." Baku, Publishing House of the
 Azerb. SSR, 1936. 112 p. (Min. of Education Azerb. SSR. Azerb. plan.
 State Ind. Inst. V.I. Lenin), 10 copies (11, 1936, 1936)

ORUDZHEV, G.A.

~~Convergence of an interpolation series of rational fractions.~~
Convergence of an interpolation series of rational fractions.

Uzv. AN Azerb. SSR. Ser.fiz.tekh. i khim.nauk no.4:3-22 '58.
(MIRA 11:11)

(Series)

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S/044/62/000/002/015/092
C111/C222

AUTHOR: Orudzhev, G. A.
TITLE: On the convergence abscissa of Newton's interpolation series
PERIODICAL: Referativnyi zhurnal, Matematika, no. 2, 1962, 24, abstract 12107. ("Tr. Azerb. gos. ped. in-ta," 1959, 8, 119-120)
TEXT: The Newton series

$$\sum_{n=1}^{\infty} a_n (z-z_1)(z-z_2) \dots (z-z_n) \quad (H)$$

is considered, where z_n has only two accumulation points -- one (z') in finite distance and the other at infinity. The author splits z_n into two sub-sequences z_{k_n} and z_{j_n} which converge to z' and ∞ , respectively. Two lemmas are proven; we give one.

Lemma 1: Let $x_1, x_2, \dots, x_n, \dots$ be a sequence of real numbers, with

Card 1/3

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C111/C222

On the convergence abscissa . . .

$\lim_{n \rightarrow \infty} x_n = \infty$; then the series

$$\sum_{n=1}^{\infty} \frac{1}{x_n} e^{-\lambda x_n}$$

converges for each $\lambda > 0$.

Using the lemma, the theorems on simple and absolute convergence of the series (H) are proven, with each theorem having two variants. In particular it is proven that, if the series converges at the point z_0

which is different from the interpolation points $(z_0 \neq z_1, z_2, \dots)$,

and if $z_n = r_n e^{i\theta_n}$ where the series $\sum_{n=1}^{\infty} \frac{1}{r_n}$ diverges, then

the series (H) converges uniformly in a domain D. The latter is defined by the conditions

Card 2/3

... $\lim_{n \rightarrow \infty} \frac{1}{n} \sum_{k=1}^n \ln x_k = \lim_{n \rightarrow \infty} \frac{1}{n} \sum_{k=1}^n \frac{1}{x_k}$...
 ... It is also proved that, if ...
 ... the series $\sum_{k=1}^{\infty} \frac{1}{x_k}$...
 ... of the simple and absolute conver-
 ... (7) ... the relation

$$\lim_{n \rightarrow \infty} \left(\ln x_n : \sum_{k=1}^n \frac{1}{x_k} \right) = \dots$$

... after ... translation. 2

... 1/1

ORUDZHEV, I.M., zasluzhennyy deyatel' nauki, prof., KULIYEVA, G., kand.med.nauk

~~Electric conductivity of the skin in diabetes mellitus.~~ Azerb.med.
zhur. no.3:63-66 Mr '58 (MIRA 11:?)

1. Iz fakul'tetskoy terapevticheskoy kliniki No.1. (o.i. zav.
kafedroy - zaslyzh. deyatel' nauki, prof. I.M. Orudzhev) Azerbaydzhansko-
go gosudarstvennogo meditsinskogo instituta im. N.Narimanova (direktor
- zasluzh. deyatel' nauki, prof. B.A. Eyvazov).
(DIABETES)
(ELECTROPHYSIOLOGY)

GASANOV, A.S., prof., zaslushennyy deyatel' nauki, ORUDZHEV, I.M., prof.,
zaslushennyy deyatel' nauki, KAPLAN, B.G., TAGIYEV, M.A.

Biochemical changes in thyrotoxicosis. Azerb.med.zhur. no.5:71-75
My '58 (MIRA 11:6)

1. Iz 1-y fakul'tetskoy terapevticheskoy kliniki (zav. -zaslushennyy
deyatel' nauki, prof. I.M. Orudzhev) i kafedry biokhimii' (zav. -
zaslushennyy deyatel' nauki, prof. A.S. Gasanov) Azerbaydzhanskogo
gosudarstvennogo meditsinskogo instituta im. N. Narimanova.
(THYROID GLAND. -DISEASES)

ORUDZHEV, I.M.; ZHEREBCHEVSKAYA, T.E.

Endocrine glands in hepatosplenomegalies. Azerb.med.zhur.
no.8:3-7 Ag '59. (MIRA 12:11)
(SPLEEN--DISEASES) (LIVER--DISEASES) (ENDOCRINE GLANDS)

OHUDZHEV, I.M.

New (sulfanilamide) preparations in treating sugar diabetes. Azerb.
med.zhur. no.10:29-32 0 '59. (MIRA 13:2)
(SULFONAMIDES) (DIABETES)

ORUDZHOV, I.M.; ALIYEV, T.A.; KULIYEVA, Sh.K.; RZAYEVA, N.D.

Errors in the diagnosis of endocrine diseases. Azerb.med.zhur.
no.1:30-35 Ja '60. (MIRA 13:5)
(ENDOCRINE GLANDS--DISEASES--DIAGNOSIS)

ORUDZHEV, I.M.; KULIYEVA, G.Ch.; ALIYEV, T.A.

Tripotemine-zinc-insulin in the treatment of diabetes mellitus.
Azerb. med. zhur. no.6:22-26 Je '60. (MIRA 14:1)
(DIABETES) (INSULIN)

GRUDINEN, L.M., zasluzhennyy doktor i nauchki prof.: ISM BGV, L.P.

Diabetes mellitus in Azerbaijan and the first results of dispensary service for diabetics. Probl. endok. i germ. 2 no. 1: 93-94. N-1973. (MIRA 1973)

1. iz fiziolo-gicheskoy terapevticheskoy kliniki N.I. Azerbaydzhanskoy gosudarstvennoy meditsinskoy shkol' ta imen' Narimanova.

MAMEDOV, Z.M., prof.; ORUDZHEV, I.M., prof.

Conference of endocrinologists of the Azerbaijan S.S.R.
Azərbaycan med. şifə. 41 no. 11:91-94 N 64. (MED 16:12)

RYABCHINSKIY, Yu.; ORUDZHEV, M., inzhener

Conference on the present state of establishing technical standards
in the enterprises of the Azerbaijan Economic Council. Sots.trud
7 no.1:146-148 Ja '62. (MIRA 15:4)

1. Nachal'nik normativno-koordinatsionnogo otdela normativno-
issledovatel'skoy stantsii Gosudarstvennogo ob'yedineniya Azer
baydzhanskoy neftyanoy promyshlennosti (for Ryabchinskiy).
2. Normativno-koordinatsionnyy otdel normativno-issledovatel'skoy
stantsii Gosudarstvennogo ob'yedineniya Azerbaydzhanskoy neftyanoy
promyshlennosti (for Orudzhev).
(Azerbaijan - Production standards - Congresses)

AGALAROV, Chinkiz Soltan; ORUDZHEV, M.D., red.; NASIROV, N.,
tekhn. red.

[Problems of general automatic control of petroleum enter-
prise reservoirs and tank farms] Voprosy kompleksnoi avto-
matizatsii rezervuarnykh parkov i neftebaz. Baku, Azer-
baidzhanskoe gos.izd-vo, 1963. 105 p. (MIRA 17:4)

L 18829-66 EWT(1) RO

ACC NR: AP6005167

SOURCE CODE: UR/0348/65/000/011/0044/0045

AUTHOR: Ismailov, M. (Director of plant protection department); Orudzhev, M. ²⁸
(Junior research associate)

ORG: AzNIKH

TITLE: Mass breeding in pests

SOURCE: Zashchita rasteniy ot vreditel'ey i bolezney, no. 11, 1965, 44-45

TOPIC TAGS: plant damage, insect control, insecticide, animal
parasite, agriculture crop

ABSTRACT: The authors discuss insect damage to cotton plants in Azerbaydzhan. Azerbaydzhan numbers 140 species of cotton-damaging insects and ticks. In recent years there has been a sharp increase in pests which formerly caused almost no damage to cotton. Extensive damage has been reported by farms in various districts and replanting has been necessary in many cases. In 1959, 82.2-100% of the cotton crop was damaged by the *Cicadatra querula* and *C. glycyrrhizae* in one area. Only after extensive aerial dusting with 12% hexachlorane were these pests eliminated. Subsequently, in the summer of 1960, two other districts suffered from a severe infestation of cotton aphids. Treatment of the fields with cistoxin and mercaptophos

UDC: 632.7 : 633.51

Card 1/2

Card 2/2 ²⁸

ORUDZHEV, S.A.; AMIYAN, V.A., redaktor.

[Method of maintaining pressure; adapted by the Shirokaya Balka
Krasnodar oil fields] Metod podderzhanii davleniia; opyt prime-
neniia na promysle Shirokaia Balka Krasnodarnefti. Moskva, 1948.
10 p. (MIRA 8:4)

(Oil wells--Gas lift) (Compressors)

ORUDZHEV, S.A.

Increasing qualitative indexes of drilling operations. Neft.khoz
no.1:10-18 Ja '56. (MLRA 9:5)

(Oil well drilling)

ORUDZHEV, S.A.

Some results of drilling operations for 1956. Neft.khoz.
35 no.1:10-18 Ja '57.

(MLRA 10:2)

(Oil well drilling)

ORUDZHEV S H

ORUDZHEV, S.A.; ALIKHANOV, E.N.

Development of oil production in Azerbaijan offshore areas. Azerb.
neft.khoz. 36 no.11:22-25 N '57. (MIRA 11:2)
(Azerbaijan--Oil well drilling, Submarine)

ORUDZHEV, S.A.

For further progress of the Azerbaijan petroleum industry. Neft.
khodz. 38 no.2:7-12 Y '60. (MIRA 13:8)
(Azerbaijan--Oil fields--Production methods)

ORUDZHEV, S.A.

Economic expediency of accelerated prospecting and development
of the Caspian Sea oil fields. Neft. khoz. 39 no.3:11-15
Mr '61. (MIRA 16:7)

(Caspian Sea region—Oil well drilling, Submarine)

ORUDZHEV, S.A.

Deep-sea structures for offshore drilling. Azerb. neft. khoz. 40
no. 4:39-43 Ap '61. (MIRA 15:7)
(Oil well drilling, Submarine—Equipment and supplies)

ORUDZHEV, Sabit Atayevich; MIRCHINK, M.F., red.; KASPARSON, A.A.,
red.; PETROVA, Ye.A., ved. red.; VORONOVA, V.V., tekhn. red.

[Deep-water large-block offshore rig bases; completion method
for new oil fields of the Caspian Sea] Glubokovodnoe krupno-
blochnoe osnovanie morskikh burovnykh; metod osvoeniia novykh
neftianyykh mestorozhdenii Kaspiiskogo moria. Moskva, Gostoptekh-
izdat, 1962. 190 p. (MIRA 15:7)
(Caspian Sea—Oil well drilling rigs)

ORUDZHEV, S.A.

Resolutions of the November Plenum of the Central Committee
of the CPSU and technical progress in petroleum production.
Neft. khoz. 41 no. 141-8 Jan 1963. (MIRA 17:7)

ORUDZHEV, S.A.; TIMOFEYEV, N.S.; MZAREULOV, D.K.

Petroleum production in Japan. Neft. khoz. 41 no.2:64-70
F '63. (MIRA 17:8)

ORUDZHEV, S., doktor tekhn.nauk, laureat gosudarstvennykh premiy

Petroleum from under the ice. Izobr.i rats. no.4:5-7 '64.
(MIRA 17:4)

1. Pervyy zamestitel' predsedatelya Gosudarstvennogo komiteta
neftedobyvayushchey promyshlennosti pri Gosplane SSSR.

ORUDZHEV, S.A.

December Plenum of the Central Committee of the CPSU and
problems in the further development of the production of
casing head gas. Neft. khoz. 42 no. 3:1-5 Mr '64.
(MIRA 17:7)

ALIKHANOV, F.N.; ASAN-NURI, A.O.; KULIYEV, I.P.; MAMEDOV, B.M.;
ORUDZHEV, S.A.; TIMOFEYEV, N.S.

Off-shore oil of the U.S.S.R. Neft. khoz. 42 no.9/10:
46-51 S-O '64. (MIRA 17:12)

KALAMKAROV, V.A.; ORUDZHEV, S.A.; GALONSKIY, P.P.; KRYLOV, A.P.;
MAKSIMOV, M.I.; TREBIN, F.A.

Accomplishments of Soviet petroleum workers in the
development of oil fields. Neft. khoz. 42 no.9/10: (MIRA 17:12)
89-99 S-O '64.

ORUDZHEV, V.A.

Regularities in the distribution of reservoir rocks in
the lower sector of a producing formation in the Apsheron
Archipelago. Izv. vys. ucheb. zav.; neft' i gaz 7 no.11:
13-16 '64. (MIRA 18:11)

1. Azerbaydzhanskiy institut nefti i khimii im. M. Azizbekova.

ORUDZHEVA, A.M., starshiy laborant

Changes in reaction of the blood in burns in children. Report
No.1. Azerb.med.shur. no.3:103-104 Nr '58 (MIRA 11:7)
(BLOOD CELLS)
(BURNS AND SCALDS)

ORUDZHEVA, D. S.

Formation of oil pools in the Sub-Kirmaki series in the
Balakhany-Sabunchi-Remany field. Geol. nefti i gaza 7 no.1:
41-45 Ja '63. (MIRA 16:1)

(Apsheeron Peninsula--Petroleum geology)

ORUDZHEVA, Dilyara Sabitovna; KHAINA, V.Ye., doktor geol.-minor.
nauk, prof., red.; DEMENT'YEVA, T.A., ved. red.

["Suspended" pools of the Apsheron Peninsula] "Vistishie"
zalezhi Apsheronskogo poluostrova. Moskva, Nedra, 1964.
160 p. (MIRA 17:12)

Transformer oils from Baku distillates. I. N. G. Kalantar. *Azerbaidzhanskoe Neftyanoe Khosyolstvo* 1933, No. 8, 22-40.—Various Baku distillates were treated with H_2SO_4 in small portions. Oils treated with 1-4% of acid gave large deposits of sludge on oxidation, a proof of incomplete refining. With 4-7% acid the highest quality transformer oils were produced. An overrefining of oils caused the formation of ethers and esters, which was accompanied by a low acid and a gradually increasing sapon. no. Treatment with about 30% acid caused the

1 formation of large quantities of acidic products. The treatment was carried out at 21-30°. Treatments with SO₂ and oleum were also used. The properties of Russian transformer oils are compared with those of foreign oils. The work was undertaken with the intention of prepg. a transformer oil which would comply with the German specifications. II. *Ibid.* 1934, No. 1, 53 9.—The Gas-oil distillates from Baku crude oils can be used in the prepg. of transformer oils in accordance with the German specifications. They should be treated with 94% (98% H₂SO₄), the amt of which should be limited to a certain max. for each distillate; oleum or SO₂ must not be used. The Baku oils are more resistant toward the contact action of metals. III. N. G. Kalantar and I. M. Orudzhbeva. *Ibid.* No. 3, 32 9.—The following stages in the acid treatment of oil are characterized: underdefined (1) the acid treatment of oil are characterized: underdefined (1) ppt. (a) heavy, acids (b) high, esters (c) none; properly refined (2), (a) light, (b) increasing, (c) increasing; refining (3), (a) very light, (b) increasing, (c) increasing; 2nd stage of overrefining (4), (a) almost absent, (b) little, (c) "esterification zone"; increasing steadily; 3rd stage of overrefining (5), (a) none, (b) heavy, (c) heavy. The British, Swiss, Italian, German and Scandinavian specifications are compared and their advantages and disadvantages are brought out. A. A. Boehlingk

A. A. Boettling

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>Preparation and testing of turbine oils Working out of the new standards. N. G. Kalantar and I. M. Orud- sheva. <i>Azerbaidzhan'skie Neftyanoe Khozaystvo</i> 1935. No. 9, 52-4. A. A. Buchtingh</p>																			
<p>ASB-51.6 METALLURGICAL LITERATURE CLASSIFICATION</p>																			

PROCESSING AND PROPERTIES INDEX

185 AND 176 (ORDER)

187 AND 190 (ORDER)

Turbidity of selectively refined oils. I. A. Gukhman,
J. M. Grudicheva and G. B. Gurvich. *Azerbaidzhan-
skoe Neftnoye Khoz* 1939, No. 2, 37-9. -Oils refined by
treatment with a selective solvent become turbid. The
viscosity index of oils turning turbid gives a misleading
value for the viscosity. The viscosity of turbid oils is
much higher than of clear oils with the same viscosity in-
dex. The turbidity can be eliminated only by dewaxing.
The addition of paraffin does not protect the oils from tur-
bidity, but it straightens out the viscosity curve of turbid
oils, causing it to approach the curve of dewaxed oils.

A. A. Bochtlingk

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CA 22

SELECTIVE REFINING WITH TWO SOLVENTS N. G. Kalantar and I. M. Chudisheva (Izvestiya Akad. Nauk SSSR, No. 10, 1964) Refining with a mixt. of nitrobenzene and acetone and HClO₄ increases the yield of the final product. High Eilat automobile oil distillates can be refined with nitrobenzene or with a mixt. of the nitrobenzene and other solvents. The consumption of nitrobenzene is high in the prepn. of highly viscous oils from the heavy Balakhany crude-oil distillates. Bright stocks and aviation lubricants can be continuously refined with nitrobenzene together with other solvents. 30% of the nitrobenzene can be replaced by other solvents. The expd. procedure is described and the results are tabulated.

ASD 516 METALLURGICAL LITERATURE CLASSIFICATION

CIA-RDP86-00513R001238

GRUDZHEVA, I.M.

5102. CATALYTIC REFINING OF LUBRICATING OILS. Kuliev, A.M., Grudzeva, I.M. and Krasovskaya, B.V. (Trud. Azerbaidzh. Univ., Ser. Khim. 1954, (3), 73-77; abstr. in Ref. Zh. Khim. (Ref. J. Chem., Moscow), 1956, (17), 55543). Catalytic refining of avtol 10 (automobile lubricating oil) and HK aviation oil in the presence of natural activated clay and synthetic aluminum silicate catalyst, with subsequent steam distillation at 200°C in the presence of natural clay, showed that the quality of avtol 10 improved with increase of temperature (within determined units). A decrease in specific gravity and viscosity-gravity constant and increase in the viscosity index was obtained. The maximum refining temperature of the avtol 10 depending on the character of the catalyst is from 375-400°. At very high temperatures the decomposition of hydrocarbons takes place and for HK aviation oil this occurs even at 375-400°.

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413. SYNTHESIS AND TESTING OF POLYFUNCTIONAL LUBRICATING OIL ADDITIVES
USED IN CARBURETTOR AND DIESEL ENGINES. Kullay, A.M., Ahmedov, G.A.,
Guzanova, I.M. and Sadykhov, K.I. (Azerbaidzh. Naft. Khim. Azerbaidzh. Oil
Ind., 1956, (6), 51-53; Abstr. In Chem. Abstr., 1957, vol. 51, 12477).
The calcium, barium and zinc salts of high molecular petroleum sulphonates
were prepared and tested. The zinc salts were found to be the best
corrosion inhibitors, whereas the barium salts were the best detergents.
Motor oil additive AZNII-5 was synthesized and found to be effective as
inhibitor of corrosion and carbon deposition; it was also a good detergent
and pour point depressant.

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KULIYEV, A.M.; AKHMEDZADE, D.A.; ORUDZHEVA, I.M.; SADYKHOV, K.I.

Synthesis and tests of multifunctional additives to oils used
in gasoline and diesel engines. Azerb.neft.khoz. 35 no.6:30-33
Je '56. (MLRA 9:10)

(Lubrication and lubricants)

KULIYEV, A.M.; QUDZHEVA, I.M.; ZAYNALOVA, G.A.; LEVSHINA, A.M.

Multipurpose AzNII-8 additive for truck and tractor oils. Azerb.
neft.khoz. 35 no.7:32-33 JI '56. (MLRA 9:12)
(lubrication and lubricants)

0510201 V
MIRDZHAYADOVA, M.M.; ORUDZHEVA, I.M.

Study of the effect of the Azervaijan Scientific Research Institute depressor on the dongealing temperature of oil fractions of Baku petroleums. Azerb.neft.khoz. 35 no.12:42-43 D '56. (MLRA 10:3)
(Baku--Petroleum)

KULIYEV, A.M.; ZEYNALOVA, G.A.; ORUDZHEVA, I.M.; LEVSHINA, A.M.

Improving output factors of diesel engines operating on sulfurous
fuels. Azerb.neft.khoz.35 no.12:44-46 D '56. (MLRA 10:3)
(Diesel engine) (Diesel fuels)

~~TOP SECRET~~
MIRDZHAVADOVA, M.M.; ORUDZHEVA, I.M.

Developing raw material resources for the production of power
engineering oils. Azerb. neft. khoz. 36 no.5:29-31 My '57.
(Mineral oils) (MIRA 10:11)

KULIYEV, A.M.; ORUDZHEVA, I.M.; MIRDZHAVADOVA, M.M.; LOGINOVA, S.N.
MUSAYEV, M.E.

Producing lubricating oils from paraffin-base crudes by de-
waxing with carbamide. Sbor.trud.AzNII NP no.2:156-172 Ag '58.
(MIRA 12:6)

(Lubrication and lubricants)
(Paraffins) (Urea)

ORUDZHEVA, I.M.; MIRDZHAVADOVA, M.M.

Investigating lubricating fractions and oils from Surakhany re-
gular crude. Shor.trud.AzNII NP no.2:179-191 Ag '58.
(MIRA 12:6)

(Baku--Petroleum)
(Lubrication and lubricants)

KULIYEV, A.M.; ORUDZHEVA, I.M.; ZEYNALOVA, G.A.; AKHMED-ZADE, D.A.;
ATAL'YAN, A.A.; LEVSHINA, A.M.; SADYKHOV, K.I.

Studies in the synthesis and use of additives for lubricating
oils. Sbor.trud.AzNII NP no.2:207-224 Ag '58. (MIRA 12:6)

(Lubrication and lubricants--Additives)

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AUTHORS: Kuliyeu, A. M., Orudzheva, I. M., Zeynalova, G. A., Atal'yan, A. A., Akhmed-Zade, D. A., Levshina, A. M., Sadykhov, K. I., Abdinova, A. B.

TITLE: Synthesis of organic compounds containing various functional groups and their applications to improve the quality of lubricating oils

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 12, 1961, 530, abstract 12M225. (Tr. 1-y Konferentsii zakavkazsk. un-tov. Baku, Azerb. un-t, 1959, 111-123)

TEXT: The authors present the results of research work which has been conducted for many years in the Azerbaydzhanskaya SSR concerning the synthesis and the choice of additives to lubricating oils. The following compounds were synthesized and their properties were studied: mono-, di-, and trialkyl derivatives of benzene, naphthalene, tetraline, anthracene, and phenanthrene; alkyl benzene-, alkyl naphthalene-, alkyl phenol-, and alkyl tetraline sulfonates of Ca, Ba, Sr, Pb, and Cu; mono- and dialkyl phenols; mono- and

Card 1/2

KULIYEV, A.M.; ABDINOVA, A.B.; ZEYNALOVA, G.A.; ORUDZHEVA, I.M.

Effect of urea derivatives on the oxidation resistance of
lubricating oils. Azerb. Khim. zhur. no. 4:15-20 59. (MIRA 14:7)
(lubrication and lubricants)
(Urea)

KULIYEV, A.B.; ~~VEYHALOVA~~, G.A.; CRUDZHEVA, I.M.

Condensation of aldehydes with aldehydes and ammonia.
Azerb. Khim. Ind. 1959, 159. (MIRA 14:9)
(Condensation products)
(Aldehydes) (Ammonia)

KULIYEV, A.M.; ORUZHNEVA, I.M.; LOGINOVA, S.N.

Production of tractor lubricating oils from Bibi Eybat paraffinic
crudes by dewaxing with the aid of carbamide. Azerb.khim.zhur.
no.1:3-7 '60. (MIRA 14:9)

(Petroleum--Refining) (Paraffin wax) (Lubrication and lubricants)

S/081/61/000/007/007/010
B107/B207

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AUTHORS: Kuliyeu, A. M., Orudzheva, I. M.

TITLE: Results of studies in the field of synthesis and application of admixtures to lubricating oils

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 7, 1961, 474, abstract 7/235 (7M235) ("Azerb. khim. zh. ", 1960, no. 2, 23 - 33)

TEXT: The authors compile the results of studies carried out at the Laboratoriya sinteza prisadok k smazochnyim maslam Instituta nefte-khimicheskikh protsessov AN Azerbaydzhanskoy SSR (Laboratory for the Synthesis of Admixtures to Lubricating Oils of the Institute of Petrochemical Processes, AS Azerbaydzhanskaya SSR). This paper deals with the synthesis and introduction into the commercial production of admixtures reducing the pour temperature, of multifunctional admixtures improving the quality of tractor- and Diesel oil, furthermore, of admixtures improving the lubricating effect of oils for bevel gears and antioxidation admixtures for power machinery oils. Besides, a number of theoretical

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Results of studies in the field....

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problems were studied, which are connected with the effect of admixtures with different functional groups upon oils and oil fractions. [Abstracter's note: Complete translation.]

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S/081/63/000/003/021/036
B144/B186

AUTHORS: Kuliyeu, A. M., Orudzheva, I. M., Mamedova, P. S.

TITLE: Study of the effect of AzNII-10 (AzNII-10) additive on the stability and frictional characteristics of oils

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1963, 514, abstract 3P241 (Azerb. neft. kh-vo, no. 7, 1962, 38-39)

TEXT: The study dealt with MK-8 (MK-8), MC-20 (MS-20) and MK-22 (MK-22) aviation oils, transformer, diesel, and also synthetic oils. The stability of oils was determined by the VTI and AzNII method. Testing of oils containing additives in the four-ball machine showed that on addition of 0.5% AzNII-10 additive (the condensation product of sulfide alkyl phenol with the chloroanhydride of alkyl phenol phosphorous acid) the frictional characteristics of the oils improve markedly. The additive raises the stability of transformer, diesel and synthetic oils; it has a positive effect on the stability of transformer oil under oxidation conditions at a temperature of $>120^{\circ}\text{C}$. When the additive AzNII-10 is added to an oil containing the additives AzNII-7 and C6-3 (SB-3), the

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stability of this oil is favorably affected. Synthetic oils containing AzNII-10 have good anticorrosive and antiscaling properties. The authors conclude that the additive AzNII-10 is capable of increasing the stability and the anticorrosive, antiscaling and frictional characteristics of oils. [Abstracter's note: Complete translation.]

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ACCESSION NR: AT4001187

S/3030/63/000/000/0116/0137

AUTHORS: Kuliyeu, A. M.; Orudzheva, I. M.; Zeynalova, G. A.;
Sady*khov, K. I.

TITLE: Synthesis and use of new additives for motor and power
plant oils

SOURCE: Uluchsheniye kachestva i sovershenstvovaniye proizvodstva
smazochny*kh masel. Trudy* Vses. soveshchaniya. Moscow,
1963, 116-137

TOPIC TAGS: motor oil, lubricant, antioxidant, additive, SB-3,
BFK-1, phosphorus containing additive, sulfonic acid,
alkylarene, alkaline earth salt, sulfonic additive,
sulfonic acid, bisphenols, alkylphenols, formaldehyde,
polyfunctional additive, aznii-11, MK-6, MK-11, fur-
famide, diphenylamine.4-hydroxy-, acetaldehyde,
ammonia, phenol.p-tert-octyl-, 1-naphthylamine.N-
phenyl-, carbamide

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ACCESSION NR: AT4001187

ABSTRACT: The results of synthesis and testing of new and perspective oil additives developed in the INKHP are summarized. A series of alkylaromatic sulfonates ($C_1 - C_{16}$; benzene, naphthalene, tetralin, phenol and chlorophenyl) were synthesized and characterized; the relationship between their detergative properties and their solubility, molecular weight, metal content, side chain length, aromatic nucleus and presence of functional groups was studied. The stability, detergent and corrosive properties of some of these compounds--SB-3, PMS-19, NG-102 were laboratory tested; SB-3 gave better results in wear and deposit formation after long term testing than AZNII-8 or TsiATIM-339. A study of Ba, Ca, and Zn salts of alkylphenol-formaldehyde condensation products indicated the Ba salt, BFK-1, to have the best detergent, anti-corrosion and antideposit properties, its effectiveness approaching that of monofunctional phosphorus-containing additives. For antioxidants, a new series of compounds was synthesized based on alkylated ureas. AZNII-11, a condensate of alkylphenol with urea and formaldehyde is especially interesting. Condensates of alkylphenols (p-tert.-butyl, -amyl, -octyl) with aldehydes (furfuralde-

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